



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/352,976	07/14/1999	MICHAEL D. GILBERT	00169-027001	2851
26161	7590	08/26/2005	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			CHANG, VICTOR S	
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 08/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/352,976

Applicant(s)

GILBERT, MICHAEL D.

Examiner

Victor S. Chang

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-6,8,9,14-26,28-30,32 and 66-79 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-6,8,9,14-26,28-30,32 and 66-79 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Introduction

1. The Examiner has carefully considered Applicants' amendments and remarks, and declaration filed on 7/19/2005. New claims 78 and 79 have been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Rejections not maintained are withdrawn.

Election/Restrictions

4. It is noted that new claims 78 and 79 are directed to non-elected method of disbonding (see Response filed 1/4/2002). As such, they are withdrawn from consideration as well.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 78 and 79 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is noted that in each of new claims 78 and 79, the preamble "The method of claim ..." is improper and indefinite, because each of the dependent upon claims 1 and

Art Unit: 1771

68 is recited as product claim, not method claim. Clarification and correction is requested.

Rejections Based on Prior Art

7. Claims 1, 5, 6, 8, 9, 14-22, 25, 28-30 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Moulton et al. (US 5441830), and evidenced by Koga (US 5565284), generally as set forth in section 7 of Office action dated 3/22/2005, together with the following response to argument.

First, the Examiner repeats the teachings of Moulton as follows: Moulton's invention is directed to methods for enhancing the adhesion of composite electrodes onto conductive plastic foils (Abstract). Typically, the "composite electrode" contains a polymer, which acts to bind the composite materials together, and an electrolytic solvent (electrolyte). For example, a composite cathode can comprise a compatible cathodic material, a conductive material, an electrolytic solvent, an alkali salt, a solid matrix forming polymer (column 8, lines 10-21), film forming agents such as polyethylene oxide, polypropylene oxide, etc. (column 12, lines 26-40). Suitable electrolytic solvents include propylene carbonate, ethylene carbonate, etc. (column 7, lines 33-34). In particular, the Examiner repeats that Moulton's composite electrode, electrolyte solvent, and matrix forming polymer read on the instantly claimed disbondable composition, electrolyte functionality, and matrix functionality, respectively. Although Moulton lacks an express teaching that the composite electrode is electrically disbondable by a faradaic reaction at bonding interface, the Examiner notes that Moulton's teaching of

methods for enhancing the adhesion of composite electrodes onto conductive foils implicitly teaches that while the bond can be enhanced, eventually it can be disbonded, i.e., disbondable. Further, the Examiner repeats that it is old and well known that the bond between a composite electrode and an electrically conductive surface is weakened by a faradaic reaction at the interface over time, as evidenced by the teaching of Koga (US 5565284) which expressly teaches that charge-discharge cycles exacerbates the interfacial adhesion (bond) between the current collector and the electrode layer (column 1, lines 39-52).

With respect to Applicant's argument "As Dr. Makrides explains in his attached declaration, a fundamental fact of all electrochemical systems is that the interface between two electronically conducting phases cannot support an electrochemical (or faradaic) reaction" (Remarks, page 9, second paragraph), the Examiner would like to remind Applicant that the structure and composition of Moulton's teachings read on the instant invention as claimed. Despite of the declaration and Applicant's argument, Applicant fails to point any distinct structure and/or composition features in the claim to preclude the prior art.

With respect to Applicant's argument "Moulton's composite electrode ... is by necessity an electronic conductor ... it cannot support a faradaic reaction at the electrode/current collector interface. In fact, if such as reaction were possible, the device incorporating such an electrode would fail, probably catastrophically" (Remarks, page 9, third paragraph), the Examiner notes that Applicant appears to be arguing that Moulton's invention would not support the catastrophic failure (or disbonding in a short

period) at the interface of instant invention. However, it should be noted claim 1 is not limited as such, Applicant's argument notwithstanding.

With respect to Applicant's argument "The invention claims an easy, quick, and reliable method ... Neither "disbonding" mechanism involves the application of voltage across the interface, or a faradic reaction at the interface [are taught by Moulton]" (Remarks, page 10, top paragraph), the Examiner respectfully reminds Applicant that the preamble in claim 1 is directed to a composition, which is read upon by Moulton, the fact that it can be disbanded easily and reliable is not recited in any claims of present application. Applicant's argument is without merit to the present rejection.

With respect to Applicant's argument "Koga does not refer to the interface between "a composite electrode and an electrically conductive surface" or to a faradaic reaction at this interface ... Koga is describing a bulk effect driven by the expansion and contraction of ... electrode material ... which leads, over time, to the fracture of material and shedding of "fine particles" ... this physical expansion and contraction is unrelated to the disbonding described in the present invention" (Remarks, page 10, middle paragraph), the Examiner repeats that Koga expressly teaches charge-discharge cycles exacerbates ... the interfacial adhesion ... between the current collector and electrode layer, which provides evidentiary support that Moulton's invention is "disbondable at interface", and claim 1 lacks distinct patentable features to preclude Moulton.

Finally, with respect to Applicant's argument "There are ... crucial differences between (1) a composite electrode ... and (2) a composition ... at the bonding interface [of instant invention]. These two materials are fundamentally different ... in varying

Art Unit: 1771


amounts, of some ingredients" (Remarks, pages 10-11, bridging paragraph), the Examiner again notes that Moulton's teachings read on claim 1 as claimed, Applicant's argument to the contrary regarding features not claimed notwithstanding.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H. Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Victor S Chang
Examiner
Art Unit 1771

8/15/2005